Indian Institute of Technology Delhi

School of Interdisciplinary Research (SIRe)

Project Proposal for Ph.D.

SIRe Project Number

2025-01-10

(will be assigned by SIRe)

Project Details	
Project Title	Synthesis of the next generation PBO fiber with reduced UV degradation property
Project Summary (Minimum 500 and maximum 2000 characters)	The Recent setbacks of Zylon-based protective gears with high mechanical strength and better fire-retardant owing to degradation in the presence of UV–vis radiation has triggered the search for aging resistant fiber. The proposed research endeavours to develop indigenous PBO (Poly(p- phenylene benzobisoxazole)) fiber using Dry jet wet spinning. Here we need to develop the interrelation among rheology of polymer, solvency and fiber properties.

Ph.D. Supervisors

Role	Name of Faculty	Academic Unit in IITD/Institute/University	Email ID (Official)
Supervisor 1	Sudip K Pattanayek	Department of Chemical Engineering	sudip@chemical.iitd.ac.in,
Supervisor 2	Rajiv Srivastava	Department of Textile and Fibre Engineering	rajiv@iitd.ac.in

Project requirements (Student qualifications, experience required, etc)
***The candidate will be shortlisted based on common shortlisting criteria decided by ScRC (SIRe)**

- Postgraduate degree in Chemistry, Polymer Science, Material Science,Textile, Chemical Engineering or allied discipline
- B.E. with GATE qualifications in Polymer Science/Textile/material science/ Chemical Engineering

Source of fellowship/funding
(CSIR/UGC/DBT/ICMR/ICAR/NEET-PG/DST-INSPIRE/IRD/FITT Project details, if any)

Candidate with his/her own fellowship

Role of Faculty Members involved:	
Supervisor-1	Guiding the physical chemistry/polymer physics and rheology component of project.
Supervisor-2	Guiding the chemistry/Textile component of the project